

REMARKS

Entry of this amendment is respectfully requested.

It is believed that the amendments to the claims overcome all §112, first and second paragraph rejections, except for the §112, first paragraph, rejection of claims 26-65 set forth in item 7 at page 3 of the Office Action. Applicants respectfully traverse that rejection.

Mohs hardness is well known standard that ranks the hardness of various materials compared to known materials, and is well known to one of skill in the art (see attached Wikipedia printout which is provided for the Examiner's review). Thus, this feature is fully enabled as it is within the purview and knowledge of one of skill in the art. No one of skill in the art would have trouble identifying particles that meet this claim feature and any experimentation required to see what types of particles meet this claim feature would not be undue; rather routine experimentation is all that would be required.

In view of the foregoing, withdrawal of all §112 rejections is respectfully requested.


Furthermore, it is not believed that the §103(a) rejections of claims 58-65 over either of Anderson or Moyle apply to the new claims, as they now recite certain features set forth in, e.g., claim 26, which were not made subject to these rejections.

In view of the foregoing, allowance is respectfully requested.

The Commissioner is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-0624, under Order No. NY-DNAG-292-US. A duplicate copy of this paper is enclosed.

Respectfully submitted

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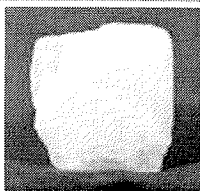



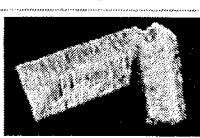


Mohs scale of mineral hardness

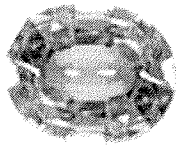
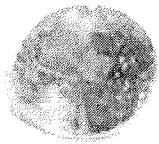

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The **Mohs scale of mineral hardness** characterizes the scratch resistance of various minerals through the ability of a harder material to scratch a softer material. It was created in 1812 by the German mineralogist Friedrich Mohs and is one of several definitions of hardness in materials science. Mohs based the scale on ten minerals that are all readily available. As the hardest known naturally occurring substance, diamond is at the top of the scale. The hardness of a material is measured against the scale by finding the hardest material that the given material can scratch, and/or the softest material that can scratch the given material. For example, if some material is scratched by apatite but not by fluorite, its hardness on the Mohs scale would fall between 4 and 5.

The Mohs scale is a purely ordinal scale. For example, corundum (9) is twice as hard as topaz (8), but diamond (10) is almost four times as hard as corundum. The table below shows comparison with absolute hardness measured by a sclerometer.

Hardness	Mineral	Absolute Hardness	Image
1	Talc ($\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$)	1	
2	Gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$)	2	
3	Calcite (CaCO_3)	9	
4	Fluorite (CaF_2)	21	
5	Apatite ($\text{Ca}_5(\text{PO}_4)_3(\text{OH}, \text{Cl}, \text{F})$)	48	
6	Orthoclase Feldspar (KAlSi_3O_8)	72	
7	Quartz (SiO_2)	100	
8	Topaz ($\text{Al}_2\text{SiO}_4(\text{OH}, \text{F})_2$)	200	

			
9	Corundum (Al_2O_3)	400	
10	Diamond (C)	1500	

On the Mohs scale, a pencil lead has a hardness of 1; a fingernail has hardness 2.5; a copper penny, about 3.5; a knife blade, 5.5; window glass, 5.5; steel file, 6.5.^[1] Using these ordinary materials of known hardness can be a simple way to approximate the position of a mineral on the scale.

The table below incorporates additional substances that may fall between levels::

Hardness	Substance or Mineral
1	Talc
2	Gypsum
2.5 to 3	pure gold, silver, aluminium
3	Calcite, copper penny
4	Fluorite
4 to 4.5	Platinum
4 to 5	Iron
5	Apatite
6	Orthoclase
6	Titanium
6.5	Iron pyrite
6 to 7	Glass, Vitreous pure silica
7	Quartz
7 to 7.5	Garnet
7 to 8	Hardened steel
8	Topaz
9	Corundum
9 to 9.5	Carborundum
<10	Ultrahard fullerite
10	Diamond
>10	Aggregated diamond nanorods

References

- [^] "The Hardness of Minerals and Rocks" by William S. Cordua (<http://www.gemcutters.org/LDA/hardness.htm>). *Lapidary Digest* (1998). Retrieved on 2007-08-19. Hosted at International Lapidary Association (<http://www.gemcutters.org/>)
- American Federation of Mineralogical Societies. "Mohs Scale of Mineral Hardness" (http://www.amfed.org/t_mohs.htm). Last Revised on April 21, 2007. Retrieved on August 19, 2007.
 - Cordua, William S. "The Hardness of Minerals and Rocks" (<http://www.gemcutters.org/LDA/hardness.htm>). *Lapidary Digest*, c. 1990.

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Categories: Materials science | Mineralogy | Scales

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